

2015 is the INTERNATIONAL YEAR OF SOIL!

Theme: Healthy soils for a healthy life.

New Hampshire Natural Resources Conservation Service (NRCS) begins our year-long commemoration by celebrating one of NH's most respected and beloved soil scientists – Sid Pilgrim.



“Within the community of soil scientists in New England, there are a few who stand out as the real ‘Dons’ or leaders of the profession. But there is only one ‘Godfather,’ and that is Sid Pilgrim of New Hampshire.”

Thom Villars, NRCS Soil Resource Specialist, VT

Sid has spent most of his life helping various entities across New Hampshire help keep our soils healthy. He has worked with a large variety of professionals whose main goal is to use our soils in NH to their best possible potential without harming them in order to keep them healthy. He has worked with or taught researchers, agronomists, mappers, foresters, geologists, town officials, state officials, wetland scientists, environmental professionals, and many other environmentally concerned individuals. He has been an integral part of NH conservation decision-making in terms of using soil maps for land development, creating soil maps for individual towns, wetlands and their needs for setbacks, wetland delineation parameters, the certification of soil scientists, and even the placement of tunnels *below* NH tidal marshes for the Seabrook Power Plant.

Sid has taught just about every existing soil scientist in the state of NH **something** about soils, and it has been noticed that when he speaks, everyone listens. If the term “soil science” is brought up, then Sid’s name always seems to be mentioned next.

Sid’s background

Sid earned a degree in Agronomy from the University of New Hampshire College of Life Science and Agriculture in 1955. He retired from the Soil Conservation Service (SCS and former name of the NRCS) in 1989 (32 years with SCS and 2 years served in the U.S. Army). He’s also worked as an educator contracted by UNH for the last 40 years (1975 to present)!

His path as a soil scientist began mapping soils for the SCS here in New Hampshire. He then transferred to Indiana and mapped soils there for three years (1961 to 1964, working in 8 counties, mostly on farms while authoring the Pulaski County Soil Survey) before he came back to NH as the SCS NH State Soil Scientist (1964 to 1989). He spent the next 25+ years as one of the leaders of soil science in NH and the northeast (and still is!).

Sid was the State Soil Scientist (SSS) during a very critical period for soils work in NH (specifically the 70s and 80s). Initial soil mapping occurred during his time as the SSS of NH: Merrimack, Belknap, Strafford, Tidal Marshes, Carroll, Hillsborough East, Sullivan, Hillsborough West and Cheshire counties were finished, and Rockingham, Grafton and Coos counties were begun. And on top of that, technical assistance to state agencies, towns and other conservation partners proved to be a huge workload due to development pressures within the state.

In 1975, Sid became the first President of the Society of Soil Scientists of Northern New England and 40 years later, he is still a major force in the direction the Society takes. He notes that he is very satisfied with being an integral part of this group, specifically interacting with soil scientists in Maine, Vermont and New Hampshire on a number of issues of mutual interests.

Sid even helped a couple of young women win the Belmont High School Science Fair in 1972 win first prize with their "land capabilities" map for the town of Belmont, later used by the town selectmen.

When asked what he considered to be some of these most important accomplishments at this busy and groundbreaking time, he replied, "For a small State like New Hampshire, money to finance the soil survey staff was a big challenge. The standard allotment from the SCS annual budget was not adequate to meet the many requests for soil maps. Cost sharing with communities that wanted soil maps as soon as possible was one activity to supplement Agency money (the first cost share mapping was done for the town of Jackson in 1965). Generally, this involved an Article on a Town Meeting Warrant so that folks could vote on the question. This entailed a considerable amount of time to work with local folks. We were able to fund a couple of soil scientist positions to accelerate town mapping via cost sharing". In the end, 62 towns were mapped and Community Interpretive Detailed Soil Reports were supplied (as of 1978)."

Also, during his tenure and NH SSS, Sid was fortunate that the SCS leaders realized that his talents and knowledge could be put to good use teaching budding soil scientists that would work in the growing private sector soil science field. "I was very fortunate to have administrators that allowed me to moonlight with UNH while working with SCS". He credits the talented team of SCS soil scientists that he worked with to allow this to happen and be successful. He became an adjunct professor in soil science at UNH teaching students "the difference between a sharpshooter (pronounced "shaaapshooter") and a banjo", defined by Sid as a small round point shovel (D shovel) held as a banjo with blade up against the body, using the overlying arm and hand to strum to a lyric. Sid noted that, in the beginning of his UNH work, the UNH faculty would shake their heads and comment about "Pilgrim and his students" as they were not the typical students that you would find on campus. "Many of the students taking my classes were members of Town Planning Boards, designers of septic tank systems, wetland delineators, foresters, and graduate engineers, etc. Most of these nontraditional students needed to learn about

the basics of soil maps and soil properties – specifically in the determination of the seasonal high water table”. Sid and UNH set up these courses so that these working professionals could attend these highly-needed classes offered outside of the typical work week. “Pilgrim and his students” could be seen tromping around UNH and the agricultural buildings in their dirty boots on Saturdays and weekday evenings.

Sid’s most memorable experiences in over 60 years in soil science

The top of his list is his experience in 1967 working at the base camp at the Lake of the Clouds Appalachian Mountain Club (AMC) hut on Mount Washington for three days studying soils above 5,000 feet in elevation. The focus of the international group (which included scientists from the US Forest Service, US Soil Conservation Service, and a Canadian Scientist from New Brunswick) was to determine why different soils formed under different vegetation zones high up in elevation. They tried to do the work initially in June but the soils were still frozen! Basically, they found that sedges could survive in solifluction terraces (these terraces are moving/wasting due to freeze thaw processes) and did not form Spodosols underneath, whereas Spodosols were able to form under stable Balsam Fir stands. The group referenced the parent materials (initially thought of as shallow to bedrock but turned out to be deep – just frozen) as congelifricate (frost-split parent materials). Now that is way up in elevation!

Another one of Sid’s most memorable experiences was the story of the lost hikers in Bethlehem, NH in 1960. One day in late July, Sid was doing some progressive mapping in the township of Bethlehem and was traveling along a seldom-used backwoods road to the mapping area when he came upon a man running down the road. The man stopped Sid and said, “Where am I?” and explained that he was leading a party of six elderly people from the Maplewood Hotel in Bethlehem and they had become lost. Sid proceeded to show him his present location by the use of aerial photos. The lost guide could not believe they had been traveling in the wrong direction and were approximately 4 miles from the hotel. The man said they were in no condition to travel that distance and had left the hotel in mid-morning for only a short walk”.

“The group was spread out over a distance of a quarter mile and we proceeded to round them up”, Sid said. “Two of the women were in no condition to walk further. I offered to assist the group by driving them back to the main highway. They realized that they were fortunate in coming upon me in this remote area. After taking them to the main road, each one INDIVIDUALLY thanked me for assisting them. Perhaps the most thankful was the guide who was very happy to see familiar ground once again.”

In Sid’s write up to his boss, he stated “I believe that the 25 minutes devoted to this was justified.”

The NH State Soil Scientist at the time replied, “Had they not come across you, this well could have developed into a disaster.”

In 1988 Sid was awarded the Silver Spade Award. This distinguished award is presented every two years to a member of a National Cooperative Soil Survey conference who has contributed outstanding regional and/or national service to soil survey. The recipients of this award become members of the exclusive Silver Spade Club.

Sid's Advice to NRCSers

He encourages current NRCS employees to consider making moves to other states as this will advance their careers, specifically if the move is consistent with their career goals. His path consisted of NH then IN and then back to NH.

Sid's perspective on the 2015 International Year of Soil

He sees the 2015 International Year of Soil as providing some interesting challenges for soil scientists, particularly climate change and its ramifications.

Sid states that, from the Global perspective, the soils of the high latitudes (i.e. permafrost soils) of the world will have a big impact as a result of climate change. The need for today is to have more detailed information (and thus study) on these Gelisols (permafrost soils) and their basic soil properties. Sid's main question is: Do permafrost soils consist mainly of organic or mineral soil material? A high organic amount in permafrost soils has the strong potential to increase the production of greenhouse gasses and accelerate climate change.

He noted a recent article in *The New Hampshire* that discusses a UNH researcher's involvement with Swedish scientists studying permafrost soils. They focused on the increase of microbial activity within permafrost as it relates to climate change. As the climate becomes warmer, permafrost melting is induced and these soils gain moisture, and as a result, microbial activity is enhanced. The microbes exhale methane which is a potent greenhouse gas that contributes to climate change (<https://thenewhampshire.wordpress.com/2014/11/14/study-illustrates-role-of-microbes-in-climate-change/>).

Sid's regional perspective

Climate change-induced rising sea levels along the east coast will require the relocation of people and structures. Evidence of sea level rise can be seen in New England. Stone walls that were built during Colonial time adjacent to tidal marshes in Rye, NH have been breached by the marsh soils and extends a short distance into the uplands (i.e., the ocean is creeping inland). This may be accelerated in the future. Detailed soil map information may play a key role in the relocation of structures along the New England coast.

Summary

Sid has spent most of his life helping various entities across New Hampshire help keep our soils healthy. That is why he is our first person featured for the celebration of the 2015 International Year of Soils. Sid has both taught and worked with a large variety of professionals whose main goal is to use our soils in NH to their best possible potential without harming them in order to keep them healthy. His wealth of experience and knowledge, and his ability to pass this on, has made him one of the most beloved and respected soils scientists in New Hampshire and the northeast.

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**Sid is well-loved and respected around the state (and region). Here are some comments from some of the people he has influenced along the way:**

“The thing I most appreciated about Sid was that he took time to answer students’ questions, and at the end of the class he bought everyone pizza that we enjoyed after finishing our final exam. He cares a lot about his students and took time to get to know each one and a little something about them at the beginning of the class, and instantly remembered everyone’s names. Pretty impressive!”

*Lindsay Jones, former student and NRCS Intern*

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“Sid did the wonderful series of New England grazing soils maps and accompanying text for my UNH-published book (and New Hampshire Agricultural Experiment Station publication) *Pastures of Plenty: The Future of Food, Agriculture and Environmental Conservation in New England* (2008), which today appears in many of the libraries of New England. I understand these are the only grazing soils maps of New England ever produced and I'm very proud of Sid's work which was commissioned exclusively for my book.”

John E. Carroll, Department of Natural Resources and Environment, UNH

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“I was contacted by Sid just after I had graduated from UNH with a Soil & Water Science degree in 1974. He had suggested strongly that I should become a member of SSSNNE, which I did. I met him at the first meeting of that organization thereafter that took place in Vermont. It would be hard to explain exactly what it was about him, but I was immediately taken by his enthusiasm and spirit. Thus began a long and what I would characterize as a fond relationship to the man. I know very few like him.”

*Gerry Miller, designer and former student*

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“I had many wonderful courses with Sid and my time spent with him will always be cherished. He is a rare jewel and as fine of a person as you could ever hope to meet in life, with his many wonderful qualities/virtues of which he possessed including an unusual combination of humility, integrity, intelligence, power of observation, discipline, wit, temperance, patience, courage, selflessness, superior teaching skills and deep understanding and appreciation for the land, are second to none.

Two of my favorite stories that I immediately recall:

Sid’s uncanny ability to ascertain the Hue, Value and Chroma of a soil at a very brief glance from several rods away is no secret. One student, out of repeated frustration of having to study the Munsell soil color charts with the soil sample at great length in an often failed attempt to determine the proper assessment of an individual sample was having lunch at one of Sid’s classes. Out of frustration he held up a Fig Newton from the rear of the classroom asking Sid to identify what the color keyed out and Sid

glanced up from his papers and immediately barked back, “10YR Value 8, Chroma 8”. The student found the correct color chip after about a minute, and in a state of amazement replied, ‘Unbelievable’, to Sid’s correct interpretation.

Another time Sid was walking across the UNH campus and passed a fellow that had not seen Sid for well over 20 years, and at the time, they had only a very brief encounter. During this time, the fellow had gained weight and lost hair. Nevertheless, when they came along side each other, Sid bid him good day and spoke his name, remembering the gentleman like it was only yesterday that they had last spoken with each other. The fellow was amazed at Sid’s exceptional memory.”

Sonny Harris, former student

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“Sid has been a huge asset to the Dept. of Natural Resources here at UNH by providing several very well-received classes (especially Wetland Delineation and Field Description of Soils). I regularly hear students say what great classes these are and what a great teacher Sid is.”

*Serita Frey, UNH Professor of Soil Microbial Ecology*

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“Sid is responsible for me becoming a soil scientist. I was a grad student at UNH in the early 70s looking for a career path and a master’s degree project. Someone said I should talk with Sid Pilgrim, the State Soil Scientist at SCS. He was very welcoming and spent a great deal of time talking with me extolling the importance of soils in all facets of land use and natural resource work. He helped me lay out a master’s project. Later he called me to say he had heard about a summer soil mapping project in Vermont and had arranged a summer job for me if I was interested. Forty years later I am still digging holes and have Sid to thank for it!

Sid is soil science in NH. We would not have certified soil scientists or soil lot sizing in NH without him. And he always was looking for ways to increase the use of soil science while staying within the boundaries of his role as a federal employee. As one of the first non-federal soil scientists in NH, working at the Southern Rockingham Regional Planning Commission, Sid ‘used’ me to get things done-developing model soil lot size ordinances and introducing the first bill to certify soil scientists in NH back in 1976 . He would work with anyone who would help further the science.

Sid has been my mentor, supervisor, teacher, colleague, and friend for over 4 decades. He changed my life as he has many. Of course, one mystery remains. Has anyone actually ever seen Sid dig a hole?”

Ray Lobdell, President Lobdell Associates, Inc., former SCS soil scientist

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“I was a young buck soil scientist fresh out of school (1988 or 1989) and performing wetland delineations for a living, I decided to take one of Sid’s short courses up at UNH to broaden my horizons;

the topic of the day was hydric soil delineation in the clayey marine sediments in New Hampshire. I traveled north with one of my colleges, the late Earl Beebe. We were in for a real education that day, trying to make sense of grey clayey soils on a subtle landscape with an extensive pit and mound micro topography to add complexity; we were really scratching our heads to decide on a boundary. Sid took the two soil scientists from southern New England aside and enlightened them with this advice ‘boys you need to average the pit and mounds and place your flags when the average number of pits outnumbers the average number of mounds’. With Sid’s advice, we were able to lay down a respectable hydric soil boundary. I have learned a lot over the years and I often recall that day when I needed to make sense of pit and mound topography and from time to time I need to apply his recommendations on difficult wetland delineations, as for marine sediments we are still trying to interpret them.

Sid always has a few words to say about the Canadians and their study of the podsolization process.

Sid is great Soil Scientist an excellent teacher and an outstanding genuine person.”

*Donald Parizek, NRCS MLRA Soil Survey Project Leader, CT*

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“Sid knows every single place to get the best of whatever...i.e....the best muffin (a place on 16 just before the intersection with 302 and storyland) the best bagel, the best full breakfast....lunch etc...he is right, it is a perk in our business...”

Cindy Balcius, Principal, Stoney Ridge Environmental LLC

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“Within the community of soil scientists in New England, there are a few who stand out as the real ‘Dons’ or leaders of the profession. But there is only one ‘Godfather,’ and that is Sid Pilgrim of New Hampshire.

First in his career with USDA as the New Hampshire State Soil Scientist, and then in his second career as an independent professional, Sid has had a huge influence on several generations of soil scientists and wetland scientists in the region. Personally, I’ve known, or known of, Sid since I came to Vermont in 1983, and have had the pleasure of working with him on issues related to soil taxonomy, soil mapping, hydric soils, and the art of teaching about soils for almost as long. Sid’s skill and interest in teaching others about the intricacies of soil science is perhaps his greatest legacy. Through countless training courses offered through UNH, other colleges and other organizations, Sid has shared his knowledge and enthusiasm for soils with hundreds, if not thousands, of people. I can’t imagine how many times someone has come up to me at some soil-related gathering and mentioned taking a soils class with Sid.

And, of course, being two soil scientists, we have disagreed over various soil-related issues at times. (If we both agreed on everything, that would only prove one of us was wrong...) But I can always count on

Sid to stand by his views and defend them vigorously – I know I have to bring my best game if I don't want to end up looking like a fool - or worse. He is the Godfather, after all."

*Thom Villars, NRCS Soil Resource Specialist, VT*

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"What I would say about Sid is that he was one of the most respected Soil Scientists in New England. In my opinion, he was part of the last 'generation' of State Soil Scientists who spent the majority of their time actively involved in soil classification and soil science as well as managing the soil survey program.

Sid had a low key (but very effective) way of getting his point across concerning a soil classification or morphology problem and could always back up his position with data and good common sense.

Several times Ken LaFlamme and I met with Sid and others to reach common ground on how to handle a certain cross-state-line issue. We would go to a meeting with our position talked over and ready to defend our reasoning for what we were doing and why it would make sense for New Hampshire to follow our example. But by the end of the meeting we would usually end up doing just the opposite and go along with Sid. On the way back to Maine, Kenny would say we had been 'Pilgrimized' again.

On top of being a great soil scientist, Sid is a great person and I feel fortunate to know him and also to have had the opportunity to work with him."

Norm Kalloch, former SCS ME State Soil Scientist

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"Sid was never too busy to offer his staff's time to complete a project or to educate the public about soils."

*Michael Lynch, NH NRCS Resource Conservationist*

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"I have always considered that Sid Pilgrim was the reason I became a soil scientist. He was instrumental in getting my first job in soil science with the Rockingham County Conservation District and in my becoming an USDA Soil Scientist. He acted as a mentor, as an over boss (Russ Kelsey was my immediate supervisor), an inspiration, and opened more doors than I knew existed. He was the ultimate cheerleader for all the soil scientists in the State, and I have always said I had the best training that I ever had with the Sid Pilgrim field days and work crews. Sid Pilgrim is the reason people in this State value soil information. Sid Pilgrim is the reason we have High Intensity Soil Mapping in the State. He authorized Jerry Rosenberg and me to draft the first High Intensity Soil Mapping Standards for New Hampshire. He promoted its use in land planning for towns and in land planning for developments. He showed the power and value of using soils to locate appropriate septic areas and the use of soils in

mitigating storm water by infiltration. Sid is the reason people read test pits and base their land planning on soils, rather than using just observed water in a test hole. He brought soil science to everyone with his classes. Sid reduced the mystic of the science to a usable and understandable tool for evaluating soils. And unlike many professors who often lose track of innovations in the field, Sid has always been more on the cutting edge than even the gurus at the national level. Sid has been on more task forces, working groups, and organizations than most could do in three life times. He has sponsored scientific papers, overseen county soil reports, and authored numerous articles. To this day, Sid Pilgrim still inspires me."

Jim Gove, President and Senior Soil and Wetland Scientist, Gove Environmental Services, Inc. and former SCS soil scientist

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"Sid Pilgrim has been teaching seminars in soil science for us for over 20 years, when our unit was called the "UNH Division of Continuing Education" and since we were renamed a few years ago to "UNH Professional Development & Training." Throughout the years, it has been a great pleasure to work with Sid. We are truly fortunate to have him as one of our instructors--not only because of his in-depth knowledge of the field, which is huge, and his ability to impart this knowledge to his students, but also because of his generosity of spirit, his sincere interest in students' well-being, and his always positive and kind approach to everyone--students and staff alike. He is one of the nicest and kindest instructors I have ever met!"

*Linda Conti, Marketing Director, University of New Hampshire, Professional Development & Training*

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"It's difficult for me to distill into words the respect and admiration that I have for Sid Pilgrim. I never served with Sid at the Soil and Conservation Service, nor did I enroll in any of his formal courses of instruction; yet, since the mid-1980's he has been a constant influence and inspiration for me as a wetland practitioner and soil scientist. During my professional life with the Corps of Engineers, I witnessed Sid's influence over the practice of soil science throughout New England – to his credit, I have heard many of Sid's words through the mouths of a multitude of fellow practitioners. I thank Sid for graciously enduring my biases and occasional pig-headedness, and for patiently sharing his sage advice and counsel. In my view, New England is a better place thanks to Sid's contributions!"

*Mike Sheehan, Senior Scientist (Wetlands and Soils),
U.S. Army Corps of Engineers (retired)*

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"In 1976 while attending UNH, Dr. N. K. Peterson invited me to join him on a Soil Conservation Service progress field review, this is where I first met Sid. I came away from this experience feeling that being a soil scientist was something I might like to do as a career. Not long after that, Sid sent a request to Dr. Peterson asking for assistance on a multiday sampling trip in Pittsburg on land owned by Champion

Paper Company. I was invited and jumped at the chance to join. I accompanied Sid up to Coos County and assisted describing and sampling soils for characterization. It was apparent to me that he was an accomplished soil scientist, what I'd come to realize later was, he was also a great teacher. I came away from this experience knowing that being a soil scientist was exactly what I wanted to do as a career. I graduated and accepted a job as a soil scientist in New Mexico. While in NM, once or twice each year, I'd check in with Sid, because what I really wanted was to work in New England, specifically New Hampshire. Three years later, in 1983, a position opened up in Grafton County. I applied, was selected and was delighted to be back in NH working for Sid. As part of the county mapping process, from time to time, Sid would join us in the field. Being the new guy, Sid 'invited' me to describe a soil profile or two. After three years of field work in NM I felt confident describing properties for each horizon. During my descriptions Sid would occasionally question my assessment. 'Are you sure that's 10YR 4/3?', ... or 'are you sure that's a fine sandy loam?'. I'd stand my ground, but eventually, I'd waffle, give in, change my mind and come up with the answer Sid knew was correct. On the drive back to the office the party leader joked that I'd been 'Pilgramized'. For the balance of my career with NRCS, working with Sid as NH State Soil Scientist, then as a UNH professor, I've been 'Pilgramized' many times. I'm thankful to have worked with Sid for 30+ years and readily admit that getting 'Pilgramized' has without a doubt made me a better soil scientist.

*Joe Homer, Retired NRCS Soil Scientist*





**SOIL SCIENTISTS STUDYING** the soils of New Hampshire tidal marshes. Kneeling, left to right: R. Bond, Milford; S. Holzey, Beltsville, Md.; C. Breeding, Durham. Standing: E. J. Pedersen, Beltsville, Md.; L. E. Garland, Upper Darby, Pa. and S. A. L. Pilgrim of Durham.



**IMPORTANCE OF SOIL** in real estate development is pointed out by this exhibit of soils maps and profiles manned by Sidney A. L. Pilgrim, left, state soil scientist, Durham and Everett Stuart, Conway, both of the Soil Conservation Ser-

vice. The display is one of 17 featured along a mile-long N.H. Forest Field Day tour held in Moultonboro recently by representatives of 25 private, state and federal forest-associated agencies.